

2. (Amended) The method of Claim 1 further comprising the act of maintaining a substantially constant flow rate of the gas into the chamber while varying the conductance.

3. (Amended) The method of Claim 1 wherein varying the conductance varies a flux of ions to the substrate.

4. (Amended) The method of Claim 1 wherein varying the conductance varies a flux of reactive atoms to the substrate.

5. (Amended) The method of Claim 1 wherein the flux of the gas on the substrate varies inversely with the conductance.

6. (Amended) The method of Claim 1 wherein a pressure in the process chamber varies inversely with the chamber conductance.

7. (Amended) The method of Claim 1 wherein varying the conductance comprises alternating the conductance between a first conductance and a second conductance, the second conductance being higher than the first conductance.

8. (Amended) The method of Claim 7 wherein the alternating between the first and second conductances is periodic.

9. (Amended) The method of Claim 7 further comprising the act of generating ions during first conductance periods.

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10. (Amended) The method of Claim 7 further comprising the act of generating reactive atoms during first conductance periods.

11. (Amended) The method of Claim 7 further comprising the act of generating a plasma during first conductance periods.

12. (Amended) The method of Claim 11 wherein generating the plasma comprises applying RF power within the process chamber during first conductance periods.

13. (Amended) The method of Claim 11 wherein generating the plasma comprises applying constant RF power within the process chamber, and further comprising the acts of:

igniting the plasma by increasing chamber pressure by lowering the conductance; and
extinguishing the plasma by decreasing chamber pressure by increasing the
conductance.

14. The method of Claim 1 wherein said varying a flux is part of a deposition sequence, the deposition sequence comprising separating each of a plurality of low conductance periods from one another by one of a plurality of high conductance periods.

15. (Twice Amended) The method of Claim 1 wherein the deposition process gas is a first deposition process gas, and further comprising the acts of:

using the first deposition process gas to form a monolayer on a surface of the
substrate;

removing the first deposition process gas from the chamber;

introducing a second atomic layer deposition process gas to the process chamber;

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generating ions from the second deposition process gas by igniting a plasma;
using the ions to promote a reaction between the second deposition process gas and
the monolayer; and
removing the second deposition process gas;
wherein varying the conductance comprises increasing the conductance during the
removing of the first deposition process gas, decreasing the conductance during
the introduction of the second deposition process gas, and increasing the
conductance during the removing of the second deposition process gas.

16. (Twice Amended) The method of Claim 1 wherein the deposition process gas is a first
deposition process gas, and further comprising the acts of:

using the first deposition process gas to form a monolayer on a surface of the
substrate;
removing the first deposition process gas from the chamber;
introducing a second atomic layer deposition process gas to the process chamber;
generating reactive atoms from the second deposition process gas by igniting a
plasma;
reacting the reactive atoms with the monolayer to form a thin film; and
removing the second deposition process gas;
wherein varying the conductance comprises increasing the conductance during the
removing of the deposition process gas, decreasing the conductance during the
introduction of the second deposition process gas, and increasing the conductance
during the removing of the second deposition process gas.

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17. (Amended) The method of Claim 1 further comprising the act of introducing purge gas pulses to the process chamber.

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18. (Amended) The method of Claim 17 wherein varying the conductance comprises varying the conductance between a first conductance and a second conductance, the second conductance being higher than the first conductance, wherein second conductance periods occur at the beginning and end of each purge gas pulse and a period of first conductance occurs between the second conductance periods.

19. (Amended) A method comprising the acts of:

establishing a first flux of a first atomic layer deposition process gas over a substrate

positioned in a process chamber by setting a first conductance of the chamber as

the first process gas deposits a monolayer over a surface the substrate;

establishing a second flux of the first process gas over the substrate by setting a second

conductance of the chamber, higher than the first conductance, as the first process

gas is removed from the chamber;

establishing a first flux of a second atomic layer deposition process gas over the

substrate by setting a third conductance of the chamber as the second process gas

reacts with the deposited monolayer; and

establishing a second flux of the second process gas over the substrate by setting a

fourth conductance of the chamber, higher than the third conductance, as the

second process gas is removed from the chamber.

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B. Please add the following new claim.

20. (New) A method comprising the acts of:

supplying an atomic layer deposition process gas to a process chamber, wherein a gas flow conductance is defined for gas exiting the chamber; and
varying a flux of the deposition process gas to a substrate in the process chamber by varying the conductance;
wherein varying the conductance comprises moving a shield defining a periphery of the chamber.

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